UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/576,676	05/23/2000	MOR HARCHOL-BALTER	MIT-118	3928

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EXAMINER
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ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 January 2006</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-7,11-17,19-22 and 25-27* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,11-17,19-22 and 25-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Examiner acknowledges Applicant's filing of an RCE on 26 January 2006.

2.   Applicant's arguments filed 26 January 2006 have been fully considered but they are not persuasive. On pages 6-7 of the Response, Applicant asserts that "Flammer does not state that one node of all corresponding nodes is chosen" since "Flammer apparently broadcast to a group located in the reception region, and not individually to a node selected from the entire set of cooperating nodes." Examiner, respectfully, disagrees. Applicant seems to assume that the language "selecting . . . one second cooperating node" means "selecting *only* one second cooperating node." However, this language can also be interpreted as "selecting at least one second cooperating node." Until Applicant limits the claim to read "only one second cooperating node," Examiner maintains that Flammer's "group" reads on the claimed limitation.

3.   In addition, even if the selection process is limited to selecting "only one second cooperating node," Examiner maintains that such a limitation would still be obvious in view of the cited prior art. Brady in view of Flammer discloses selecting a group of nodes (Flammer: col. 1, lines 54-60). It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d

272, 205 USPQ 215 (CCPA 1980). Since Brady in view of Flammer discloses selecting a group

of nodes, it would have been obvious to one of ordinary skill in the art to select any number of

nodes, including one, absent a showing of criticality by Applicant.

4.   In view of the foregoing, Examiner maintains that the claims are obvious in view of the

cited prior art.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 1-3, 5-7, 11-17, 19-22, and 25-27 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Brady (USPN 6,041,049), of record, in view of Flammer (USPN 5,007,052),

of record.

7.   Regarding claims 1 and 14, Brady teaches a method and system for discovery of

cooperating nodes in a network of nodes in which each cooperating node has information

(routing table) about at least one other cooperating node (col. 2, lines 48-67), the method

comprising the steps of and the system comprising means for performing, by each cooperating

node in the network of nodes (col. 3, lines 35-55): (a) selecting, by each first cooperating node

("home" node), from cooperating node information ("first exchange of data" information which

comprises knowledge by the "home" node of its "neighbor" nodes) available to the first

cooperating node, one second cooperating node ("neighbor" node) (col. 2, lines 48-67 and col. 4,

lines 18-22) where the "home" node selects all "neighbor" nodes (the claim does not limit the

selection to *only* one second cooperating node) from the "first exchange of data" in order to exchange with the neighbor node its entire routing table; (b) transmitting from the first cooperating node ("home" node) to the second cooperating node ("neighbor" node) at least a portion of the cooperating node information (routing table) available to the first node (col. 2, lines 48-67 and col. 4, lines 18-22); (c) periodically repeating steps (a) and (b) (col. 2, lines 48-67) whereby all cooperating nodes in the network of nodes are discovered (col. 2, lines 48-67).

Brady does not expressly disclose that the selecting is done either randomly or pseudorandomly. Flammer teaches, in a system for broadcasting information (transmitting to all neighbor nodes), that it is well known in the art to decrease overload in a network during a broadcast by "selectively but randomly address[ing] a small group of nodes in a reception region" (col. 1, lines 53-57). The combination of Brady and Flammer suggests randomly selecting a single neighbor node or a set of neighbor nodes from the entire list of neighbor nodes in order to reduce the overhead in the system at the cost of increasing the amount of time (increasing the number of repeated steps) it takes to determine the topology of the network. It would have been obvious to one of ordinary skill in the art at the time of the invention to randomly choose by each first cooperating node, from cooperating node information available to the first cooperating node, a second cooperating node in order to decrease the bandwidth used by the system to determine the topology of the system.

8.   Regarding claim 2, Brady in view of Flammer discloses that step (a) comprises randomly choosing by a first node, from cooperating node information available to the first node, a second node (Flammer: col. 1, lines 53-57).

9.   Regarding claim 3, Brady in view of Flammer discloses that step (a) comprises randomly

choosing by a first node, from cooperating node information available to the first node, a second

node (Flammer: col. 1, lines 53-57). Brady in view of Flammer does not expressly disclose that

step (a) comprises pseudo-randomly choosing by a first node, from cooperating node information

available to the first node, a second node; however, Examiner takes official notice that pseudo-

random selection is another well-known selection technique that substitutes for random selection.

It would have been obvious to one of ordinary skill in the art at the time of the invention to

pseudo-randomly choose by a first node, from cooperating node information available to the first

node, a second cooperating node in order to decrease the bandwidth used by the system to

determine the topology of the system using a selection technique well-known in the art.

10.   Regarding claim 5, Brady in view of Flammer that step (a) comprises randomly or

pseudorandoly choosing by a first node, from cooperating node information stored in the first

node, one second node (Brady: col. 2, lines 48-67 and Flammer: col. 1, lines 53-57) where it is

implicit that one node is chosen.

11.   Regarding claim 6, Brady in view of Flammer discloses that step (b) further comprises

transmitting from the first node to the second node at least a portion of the cooperating node

information available to the first node (Brady: col. 2, lines 48-67), said cooperating node

information comprising a list of cooperating nodes and resources available (routes) at each listed

cooperating node (Brady: col. 2, lines 48-67).

12.   Regarding claim 7, Brady in view of Flammer discloses that step (b) comprises

transmitting from the first node to the second node at least a portion of the cooperating node

information available to the first node, said at least a portion of the cooperating node information

comprising all of the first node's cooperating node information (Brady: col. 2, lines 48-67 and

col. 4, lines 18-21).

13.   Regarding claim 11, Brady in view of Flammer discloses after step (b) and prior to step

(c), the step of: (b1) merging, by the second node, the cooperating node information transmitted

by the first node with cooperating node information available to the second node (Brady: col. 4,

lines 18-41); and wherein step (c) comprises periodically repeating steps (a), (b), and (b1) (Brady:

col. 2, lines 48-67 and col. 4, lines 18-41).

14.   Regarding claim 12, Brady in view of Flammer discloses prior to step (c), the steps of:

(b1) requesting, by the first node, from the second node, at least a portion of the cooperating

node information available to the second node (Brady: col. 2, lines 48-67); (b2) receiving, by the

first node, from the second node, at least a portion of the cooperating node information available

to the second node (Brady: col. 2, lines 48-67); and wherein step (c) comprises periodically

repeating steps (a), (b), (b1), and (b2) (Brady: col. 2, lines 48-67). Brady in view of Flammer

does not expressly disclose that the steps (b1) and (b2) occurs after step (b) and prior to step (c);

however, it would have been obvious to one of ordinary skill in the art at the time of the

invention that step (b) and steps (b1) and (b2) are interchangeable since a reversal of the order of

the steps will not result in a different outcome for the topology. As such, it would have been

obvious to one of ordinary skill in the art at the time of the invention to perform steps (b1) and

(b2) after step (b) and before step (c).

15.   Regarding claim 13, Brady in view of Flammer discloses prior to step (c), the steps of

(b1) merging, by the second node, the cooperating node information transmitted by the first node

with cooperating node information available to the second node after step (b) (Brady: col. 4,

lines 18-41); (b2) requesting, by the first node, from the selected cooperating node, at least a

portion of the cooperating node information available to the second node (Brady: col. 2, lines 48-

67); (b3) receiving, by the first node, from the selected cooperating node, at least a portion of the

cooperating node information available to the second node (Brady: col. 2, lines 48-67); (b4)

merging, by the first node, the cooperating node information transmitted by the second node with

cooperating node information available to the first node (Brady: col. 2, lines 48-67); and wherein

step (c) comprises periodically repeating steps (a), (b), (b 1), (b2), (b3), and (b4) (Brady: col. 2,

lines 48-67).

Brady in view of Flammer does not expressly disclose that the steps (b2)-(b4) occurs

after step (b) and prior to step (c); however, it would have been obvious to one of ordinary skill

in the art at the time of the invention that step (b) and steps (b2)-(b4) are interchangeable since a

reversal of the order of the steps will not result in a different outcome for the topology. As such,

it would have been obvious to one of ordinary skill in the art at the time of the invention to

perform steps (b2)-(b4) after step (b) and before step (c).

16.   Regarding claim 15, Brady discloses a method for discovery of cooperating nodes in a

network of nodes in which each cooperating node has information (routing table) about at least

one other cooperating node (col. 2, lines 48-67), comprising performing, by each cooperating

node in the network of nodes (col. 3, lines 35-55), the steps of: (a) selecting, by each first

cooperating node ("home" node), from cooperating node information ("first exchange of data"

information which comprises knowledge by the "home" node of its "neighbor" nodes) available

to the first cooperating node, a second cooperating node ("neighbor" node) (col. 2, lines 48-67

and col. 4, lines 18-22) where the "home" node selects all "neighbor" nodes (the claim does not

limit the selection to *only* one second cooperating node) from the "first exchange of data" in

order to exchange with the neighbor node its entire routing table; (b) requesting, by the first

cooperating node, from the second cooperating node, at least a portion of the cooperating node

information available to the second node (col. 2, lines 48-67 and col. 3, lines 56-61) where the

home node initial route query of the neighbor nodes is, as broadly defined, the "request" since

this query ultimately enables the neighbor node to transmit its route table to the home node (col.

4, lines 18-21); (c) receiving, by the first cooperating node, from the second cooperating node, at

least a portion of the cooperating node information available to the second node (col. 2, lines 48-

67 and col. 4, lines 18-21); (d) periodically repeating steps (a), (b), and (c) (col. 2, lines 48-67)

whereby all cooperating nodes in the network of nodes are discovered (col. 2, lines 48-67).

Brady does not expressly disclose that the selecting is done either randomly or

pesudorandomly. Flammer teaches, in a system for broadcasting information (transmitting to all

neighbor nodes), that it is well known in the art to decrease overload in a network during a

broadcast by "selectively but randomly address[ing] a small group of nodes in a reception

region" (col. 1, lines 53-57). The combination of Brady and Flammer suggests randomly

selecting a single neighbor node or a set of neighbor nodes from the entire list of neighbor nodes

in order to reduce the overhead in the system at the cost of increasing the amount of time

(increasing the number of repeated steps) it takes to determine the topology of the network. It

would have been obvious to one of ordinary skill in the art at the time of the invention to

randomly choose by each first cooperating node, from cooperating node information available to

the first cooperating node, a second cooperating node in order to decrease the bandwidth used by

the system to determine the topology of the system.

17.   Regarding claim 16, Brady in view of Flammer discloses that step (a) comprises

randomly choosing by a first node, from cooperating node information available to the first node,

a second cooperating node (Flammer: col. 1, lines 53-57).

18.   Regarding claim 17, Brady in view of Flammer discloses that step (a) comprises

randomly choosing by a first node, from cooperating node information available to the first node,

a second node (Flammer: col. 1, lines 53-57). Brady in view of Flammer does not expressly

disclose that step (a) comprises pseudo-randomly choosing by a first node, from cooperating

node information available to the first node, a second node; however, Examiner takes official

notice that pseudo-random selection is another well-known selection technique that substitutes

for random selection. It would have been obvious to one of ordinary skill in the art at the time of

the invention to pseudo-randomly choose by a first node, from cooperating node information

available to the first node, a second cooperating node in order to decrease the bandwidth used by

the system to determine the topology of the system using a selection technique well-known in the

art.

19.   Regarding claim 19, Brady in view of Flammer discloses that step (a) comprises choosing

by a first node, from cooperating node information stored in the first node, one cooperating node

(Brady: col. 2, lines 48-67) where it is implicit that one cooperating node is chosen.

20.   Regarding claim 20, Brady in view of Flammer discloses that step (b) further comprises

requesting, by the first node, from the second node, at least a portion of the cooperating node

information available to the second node (Brady: col. 2, lines 48-67), said cooperating node

information comprising a list of cooperating nodes and resources (routes) available at each listed

cooperating node (Brady: col. 2, lines 48-67).

21.   Regarding claim 21, Brady in view of Flammer discloses that step (b) comprises requesting, by the first node, from the second node, at least a portion of the cooperating node information available to the second node (Brady: col. 2, lines 48-67), said at least a portion of the cooperating node information comprising all of the second node's cooperating node information (Brady: col. 2, lines 48-67 and col. 4, lines 18-21).

22.   Regarding claim 22, Brady in view of Flammer discloses that step (d) comprises periodically repeating steps (a), (b), and (c) by each of the cooperating nodes (Brady: col. 2, lines 48-67 and col. 3, lines 45-55).

23.   Regarding claim 25, Brady in view of Flammer discloses after step (c) and prior to step (d), the step of: (c 1) merging, by the first node, the received cooperating node information with cooperating node information available to the first node (Brady: col. 4, lines 18-41) and wherein step (c) comprises periodically repeating steps (a), (b), (c 1) and (c) (Brady: col. 2, lines 48-67 and col. 4, lines 18-41).

24.   Regarding claim 26, Brady in view of Flammer discloses before step (d) the step of: (aa) transmitting from the first node to the second node, at least a portion of the cooperating node information available to the first node (Brady: col. 2, lines 48-67); and wherein step (d) comprises periodically repeating steps (aa), (a), (b), and (c) (Brady: col. 2, lines 48-67).

25.   Regarding claim 27, Brady in view of Flammer discloses after step (aa), the step of (bb) merging, by the second node, the cooperating node information transmitted by the first node with cooperating node information available to the second node (Brady: col. 4, lines 18-41) and wherein step (d) comprises periodically repeating steps (aa), (bb), (a), (b), and (c) (Brady: col. 2, lines 48-67 and col. 4, lines 18-41).

Conclusion

26.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Serkowski (USPN 5,914,939), of record, see col. 1, lines 11-25 and col. 3, line 8-col.

4, line 9 which pertains to overloading a network by broadcasting topology updates, merging

routing tables, and allowing changes to quickly propagate through the network. Conlon (USPN

5,051,987), of record, see entire document which pertains to discovering the topology of a

network.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The

examiner can normally be reached on Mon.-Fri. 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

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system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DJR   Daniel J. Ryman
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